

I/WE Claim:

1. A refrigerator comprising:
 - a cabinet shell including a fresh food compartment and a freezer compartment;
 - a passage for fluidly interconnecting said fresh food compartment with said freezer compartment;
 - a variable position damper provided in the passage for directing a flow of cooling air to the fresh food compartment from the freezer compartment;
 - a refrigeration system for cooling at least the freezer compartment, said refrigeration system including a compressor, a condenser, an evaporator, an evaporator fan, and a fresh food compartment air stirring fan positioned in the fresh food compartment, each of said compressor, evaporator fan and stirring fan being operable at varying speeds;
 - a plurality of sensors for detecting various operating parameters of the refrigerator; and
 - a control system for altering a position of the damper and varying an operational speed of each of the compressor, evaporator fan and stirring fan based on signals received from the plurality of sensors.
2. The refrigerator according to claim 1, wherein one of the plurality of sensors constitutes a temperature sensor mounted within the freezer compartment for sensing a freezer compartment temperature.
3. The refrigerator according to claim 2, wherein the control system varies the operational speed of the compressor based upon the freezer compartment temperature.

4. The refrigerator according to claim 3, further comprising: means for an operator to select a desired operating temperature, wherein the control system varies the operational speed of the compressor based solely upon the freezer compartment temperature and the desired operating temperature.
5. The refrigerator according to claim 1, wherein said plurality of sensors includes a freezer compartment temperature sensor, an evaporator temperature sensor, a fresh food compartment temperature sensor, and an ambient temperature sensor.
6. The refrigerator according to claim 5, wherein the ambient temperature sensor is positioned directly adjacent to said condenser.
7. The refrigerator according to claim 5, wherein said control system maximizes the operational speed of the evaporator fan based on signals received from the evaporator temperature sensor and the ambient temperature sensor.
8. The refrigerator according to claim 7, wherein said control system reduces the operational speed of the evaporator fan based on the operating speed of the compressor.
9. The refrigerator according to claim 8, further comprising: means enabling an operator to select a desired operating temperature for the refrigerator, wherein the control system varies the operational speed of the compressor based solely upon the freezer compartment temperature and the desired operating temperature.

10. The refrigerator according to claim 1, wherein the entire refrigeration system is mounted above the cabinet shell.

11. A refrigerator comprising:

a cabinet shell including a fresh food compartment and a freezer compartment, said fresh food compartment being adapted to be placed in fluid communication with said freezer compartment;

a refrigeration system including a compressor, condenser, evaporator coil, an evaporator fan, and a fresh food compartment air stirring fan, each of said compressor, evaporator fan and stirring fan being operable at varying speeds;

an evaporator coil temperature sensor for detecting a temperature of the evaporator coil;

an ambient air temperature sensor for detecting a temperature of the ambient air; and

a control system for regulating the refrigeration system, said control systems establishing an operational speed of the evaporator fan based on signals received from the evaporator coil temperature sensor and the ambient air temperature sensor.

12. The refrigerator according to claim 11, wherein said control system maximizes the operational speed of the evaporator fan based on the signals received from the evaporator coil temperature sensor and the ambient air temperature sensor.

13. The refrigerator according to claim 12, wherein said control system reduces the operational speed of the evaporator fan based on the operating speed of the compressor.

14. The refrigerator according to claim 11, further comprising:
a freezer compartment temperature sensor for sensing a freezer compartment temperature; and

means enabling an operator to select a desired operating temperature for the refrigerator, wherein the control system varies an operational speed of the compressor based solely upon the freezer compartment temperature and the desired operating temperature.

15. The refrigerator according to claim 11, wherein the entire refrigeration system is mounted above the cabinet shell.

16. A method of controlling a refrigeration system, including a variable speed compressor, an evaporator, and a variable speed evaporator fan, for developing a flow of cooling air within a compartment of a refrigerator comprising:

sensing a temperature in the compartment;

sensing an ambient temperature;

determining a desired operating temperature for the refrigerator based on a setting selected by an operator of the refrigerator;

varying an operational speed of the compressor based on the desired operating temperature and the temperature in the compartment;
and

varying an operational speed of the evaporator fan based on the operational speed of the compressor.

17. The method of claim 16, further comprising: varying the operational speed of the compressor solely on the desired operating temperature and the temperature in the compartment.

18. The method of claim 16, further comprising:
 - sensing a temperature at coils of the evaporator;
 - maximizing the operational speed of evaporator fan based on the temperature at the coils of the evaporator and the ambient temperature;
 - and
 - reducing the operational speed of the evaporator fan based on the operational speed of the compressor.
19. The method of claim 16, further comprising:
 - varying a speed of a stirring fan provided in the refrigerator.
20. The method of claim 16, further comprising:
 - controlling the refrigeration system based on opening signals for at least one door of the refrigerator.